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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,078	03/16/2005	Holger Luethje	1-16784	8778
1678 7590 12/27/2006 MARSHALL & MELHORN FOUR SEAGATE, EIGHT FLOOR TOLEDO, OH 43604			EXAMINER DAVIS, OCTAVIA L	
			ART UNIT 2855	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/511,078

Applicant(s)

LUETHJE ET AL.

Examiner

Octavia Davis

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/12/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 5 and 7 – 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hesthamar et al (5,343,759).

Regarding claim 1, Hesthamar et al disclose a device for measuring the forces between components of an assembly comprising a first force applying means 23 comprising a thread, a second force applying means (nut) (See Col. 3, lines 56 – 67), a measuring element 2 in the form of a washer that contacts the force applying means 23 (See Col. 3, lines 56 – 67), the washer 2 comprising a piezoresistive coating of an amorphous material 7 (See Col. 3, lines 65 – 67, Col. 5, lines 45 – 49 and Col. 6, lines 6 – 8) such that the electrical resistance of the washer is continuously variable as a function of the axial force applied by the means 23 (See Col. 5, lines 8 – 12), a component 5 that fixes the means 23 and contact means 4 and a signal pick-up 10 (See Col. 4, lines 9 – 13).

Regarding claims 4 and 5, the pick-up 10 included contact element 4 for inductive signal value transmission (See Col. 4, lines 19 – 27).

Regarding claim 7, the device provides an electrical connection to the earth (See Col.1, lines 29 – 37 and Col. 2, lines 20 – 24).

Regarding claim 8, the screw 23 is made of steel or metal (See Col. 3, lines 60 – 66).

Regarding claim 9, the fixing component fixes the nuts and bolts (See Fig. 1a).

Regarding claims 11 and 12, the washer 2 has a circular shape (See Col. 6, lines 9 – 10) and it contains a plastic cover layer 22 that protects the amorphous material (See Col. 6, lines 6 – 17).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hesthamar et al in view of Payne (4,041,776).

Regarding claim 10, Hesthamar et al disclose all of the limitations of these claims except for an acoustic or optical indicating device for adjusting axial force values. However, Payne discloses a strain indicator 36 comprising an optical indicator which upon projection causes its brightly colored external surface 48 to be exposed which indicates that a decrease in load on the fastener has taken place (See Col. 4, lines 20 – 26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hesthamar et al according to the teachings of Payne for the purpose of, utilizing an optical indicator to output a visual indication that a fastener is in a loosened condition to apply an appropriate torque to the fastener to re-0extableis take up (See Payne, Col. 4, lines 27 – 33).

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Allowable Subject Matter

5. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for indicating allowable subject matter is that there cannot be ascertained prior art that anticipates or makes obvious the provisions of a *piezoresistive layer comprising sp² hybridization with diamond-like sp³ hybridization structures* in combination with the other limitations presented in claim 11.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Luthje et al (7,073,390) disclose a sensor for determining the state of parameters on mechanical components while using amorphous carbon layers having piezoresistors properties.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Octavia Davis whose telephone number is 571-272-2176. The examiner can normally be reached on Mon through Thurs from 9 to 6. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

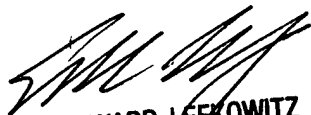
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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



OD/2855

12/20/06



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